

## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 401-1	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/KR2004/000293</b>	International filing date(day/month/year) <b>13 FEBRUARY 2004 (13.02.2004)</b>	Priority date (day/month/year) 28 JULY 2003 (28.07.2003)	
International Patent Classification (IPC) or national classification and IPC  <b>IPC7 B23Q 3/155</b>			
Applicant  <b>YIWON ENGINEERING INC. et al</b>			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☐ (sent to the applicant and to the International Bureau) a total of \_\_\_\_\_ sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_ containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
  - ☒ Box No. I Basis of the report
  - ☐ Box No. II Priority
  - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Box No. IV Lack of unity of invention
  - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - ☐ Box No. VI Certain documents cited
  - ☐ Box No. VII Certain defects in the international application
  - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand  <b>28 FEBRUARY 2005 (28.02.2005)</b>	Date of completion of this report  15 NOVEMBER 2005 (15.11.2005)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer  KIM, Chun Hee  Telephone No. 82-42-481-5417 

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/000293

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☒ This report is based on translations from the original language into the following language English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☒ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished

- ☐ the description:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☐ the claims:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☐ the drawings:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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## Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-5	YES
	Claims		NO
Inventive step (IS)	Claims	1-5	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims		NO

### 2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: US 5,613,929 A (25 March 1997)

D2: US 5,039,261 A (13 August 1991)

D3: JP 60-131147 A (12 July 1985)

D4: JP 61-109647 A (28 May 1986)

#### 1. Novelty (N)

Claims 1-5 relate to an automatic tool changer for automatically detecting the position of a drawbar unit according to an oscillator signal frequency generated by the core and coil formed at an outer circumference of the drawbar unit, characterized in that the LC oscillator is formed in such a manner that the coil winding the drawbar unit can be part of the LC oscillator, and in that the oscillator frequency detects the current position of the drawbar unit according to the position of a magnetic core.

Comparing said claims of the present application with D1-D4, they are in the similar technical field because they are directed to kinds of tool changers for automatically controlling a spindle by a controller by detecting the position or speed of an automatic tool changer. However, none of the documents D1-D4 disclose all the technical features of the present invention.

Therefore, claims 1-5 meet the requirement of PCT Article 33(2) in respect of novelty.

#### 2. Inventive Step (IS)

It is not considered that a person skilled in the art could have readily invented the automatic tool changer of the present invention, which is capable of detecting the current position of a tool of an automatic tool changer, by using D1-D5, taken alone or in combination.

Therefore, claims 1-5 meet the requirement of PCT Article 33(3) in respect of inventive step.

(Continued on Supplemental Sheet.)

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.  
Continuation of:

Box V.

**3. Industrial Applicability (IA)**

Since the present invention relates to a tool changer for detecting the current status of a tool by a controller to which information on the current position of a drawbar unit is sent, the present invention can be usefully utilized for a tool exchange device.

Therefore, claims 1-5 meet the requirement of PCT Article 33(4) in respect of industrial applicability.